

# TRIENNIAL REVIEW PROCESS SUMMARY AND WORK PLAN

2012-2014  
DRAFT

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Water Quality Standards Section

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### Executive Summary

The Triennial Review Process is outlined in the Clean Water Act ('the Act') (Sec. 131.20) to be able to give voice to the public on their individual state's water quality. Iowa Department of Natural Resources (DNR) completes this process regularly in varying forms; however, this is the first period where the DNR is attempting to standardize and formalize this process. This report describes how Iowa has conducted this process, to interact with the public and enact changes based on their feedback for the period from 2010 to 2013. It also details the decision making periods, technical advisory committee (TAC) formation, and final determinations that came as a result.

The public turned out with a wide variety of issues in this review process. Public meetings served as a great way for the DNR to engage with the public and give them a face and a voice in this process. It became clear during this process that while some of the public may not directly understand how the Water Quality Standards affect them, they still care very deeply about the quality of their streams and want to know they are being protected.

As a result of this process, four key areas were identified as being priorities based on their importance, ability to be carried out, and on existing projects. These higher priority items include looking at how metals are analyzed and reported, reviewing our lake/wetland designated use classification, populating the designated use classification for very small coldwater streams, and evaluating experience with Iowa's newly (2010) updated Antidegradation policy after it has had time to be put to use.

This work will have to occur at the same time as ongoing projects. There are cycles of field assessment and rulemaking required for stream designations. The DNR is in the process of updating the former Basin Support Document (now, the Waste Load Allocation Procedure). The DNR will again be at the start of its next Triennial Review period near the end of 2013, and the whole cycle will repeat.

## I. Objective

The Triennial Review is a process outlined in the Clean Water Act ('the Act') (Sec. 131.20). According to the Act, a state "shall from time to time, but at least once every three years, hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards". A more complete excerpt can be found in Appendix A, Clean Water Act Triennial Review Provision.

One of the key goals of this provision of the Act is to give the public a way to directly participate in the water quality goals for their state's water bodies. For the public that has an interest in participating in how the Water Quality Standards are set up, this is a direct mechanism that provides a forum for their ideas. Proposed changes can include a variety of topics, and in Iowa, we opened up the floor to any and all ideas as they related to Water Quality Standards.

The other primary goal of the Triennial Review is to consider new data and research about streams. Is there new information about how these streams are being used by people/aquatic life? Is new research available that shows some compounds may be of more or less concern than previously known? Are there new trends, new ways the standards might be evaluated to promote protection of Water Quality in our state?

The Triennial Review process described in this Work Plan is the work completed in 2010 and 2011 to develop a work plan for the next three years, from 2012 to 2015.

## II. Background

The Triennial Review process described in this Work Plan began in Summer 2010 with the planning and setup stages. It is important to note here that while not formally referred to as the Triennial Review previously in Iowa's Water Quality Standards Section, this process has actually been going on for some time with different public and stakeholder meeting opportunities for a number of topics including the 2005/2006 revisions to the Water Quality Standards, Antidegradation, total dissolved solids/chlorides, chemical criteria, and most recently, the Waste Load Allocation Procedure (WLAP). This Triennial Review seeks to formalize this ongoing process.

To initiate this Triennial Review process, the department met internally in Summer 2010 with a group of participants from the Water Quality Bureau who work most directly with the Water Quality Standards. This group was referred to as the "Core Group" and included members from the Water Quality Standards Section, the Waste Load Allocation Section, the National Pollutant Discharge Elimination System (NPDES) Section, the Wastewater Engineering Section, as well as the Bureau Chief. These members worked through the requirement as specified in the Act and formulated a plan for how to carry this out.

This plan included meeting with DNR's own internal stakeholders, external stakeholders, and public meetings across the state. This also included plans for a preliminary meeting with EPA. Each of these areas is discussed in more detail below.

### III. DNR Internal Stakeholder Meeting

The department held its internal DNR Stakeholder Meeting on December 15, 2010. The purpose of this meeting was to find out what might be the hot topics/new and emerging issues in different sections of the DNR. This would also serve as an advance look at what some of the external stakeholder and public comments might touch on. Representatives of sections of the DNR that might be directly or indirectly involved with the Water Quality Standards were asked to participate including the following:

- Contaminated Sites Section
- Field Offices
- Fisheries
- NPDES Section
- Total Maximum Daily Load (TMDL) Section
- Underground Storage Tank (UST) Section
- Wastewater Engineering Section
- Water Trails Program
- Watershed Improvement and Watershed Monitoring & Assessment Sections

At this meeting, the department gave an introduction of what the Triennial Review was, how these rules might impact different program areas, and then opened up a discussion as to areas of concern. Some of the areas of concern brought up at this meeting included:

- 304(a) and Metals Criteria – Concerns have been expressed with DNR’s adoption of Section 304(a) of the Clean Water Act (CWA). These include “DNR’s adoption of 304(a) criteria for toxic metals has pushed our criteria to very low levels and levels that are likely well below what occurs naturally in the earth’s crust (and thus in sediment that is collected along with water samples during WQ monitoring)”. Another issue of concern included that the criteria used for aquatic life is the same for designations of B(WW-1), B(WW-2), and B(WW-3).
- Ambient monitoring – A comment noted that the department was no longer doing metals in ambient monitoring anymore (expensive to do), but it might be worthwhile to consider.
- Bacteria – Primary concerns here involve (1) the use of a beach criterion to assess support of uses in rivers and streams; (2) the use of an indicator bacterium (*E. coli*) that an increasing amount of research suggests can survive and possibly replicate in sediment (thus interfering with the presumption that levels of *E. coli* indicate the degree of fecal contamination); and (3) the perception that the single-sample maximum criterion is equivalent to the geometric mean as a statistic to be used in identifying impairments. (See also single sample max.)
- Chapter 61 – This is a catch-all category for topics that were either broad, or didn’t seem to fit anywhere else such as comments about groundwater, nonpoint source pollution, and wanting the ability to self report their usage of streams (which the DNR Water Quality Standards section already has via an online survey on the bottom of our Water Quality Standards home page at <http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterQualityStandards.aspx>
- Cold water criteria - There are two types of streams, but the DNR has only officially identified B(CW-1) streams, not the B(CW-2) headwaters streams.
- Data sharing between organizations - ISU has been working on a river use survey of main stems. There may be a way to collaborate in data collection.

- Flowing water/sediment standards – DNR doesn't presently have a flowing waters sediment standard. There are questions about how to enforce this, such as how much sediment is too much? Agricultural field erosion has dropped quite a bit in the last couple of decades.
- Fungicides (pyraclostrobin) – Pyraclostrobin is the active ingredient in crop fungicides. There has been a dramatic increase in the use of aerial application of this chemical the past couple years. The department has documented five fish kills in the state caused by this chemical.
- Human health criteria and the maximum contaminant level (MCL) - The Human Health–F&W (HH-F&W) standards are presumably applicable at the same locations as Class C standards. Since the HH-F&W standards also include consumption of fish that bioaccumulate the contaminant, some feel the HH-F&W standard should be less than the drinking water MCL. Along that same thought process, it is felt that it does not make sense for an HH-F&W standard to be greater than an MCL. The responder feels that HH-F&W standards were established using a specific risk-based calculation that does not yield results that are consistent with MCLs.
- Mussels - Mussel beds are disappearing. You just don't find many anymore; they are becoming fairly depleted. A lot of mussel harvesting has occurred in the past. Remnants of that effect are left. Mussels have a complex life cycle, with eggs, fish host, etc. Access to places from development or dams is also causing concerns.
- Nonpoint source pollution – NPDES permitting (one of our primary regulatory tools) functions well in preventing point source discharge contamination but is not designed to address contamination that is predominately of nonpoint origin.
- Nutrients standards - Comments indicate it is important to those inside and outside the agency that DNR continue its efforts to establish nutrient criteria for lakes, rivers, and streams. Since many nutrients can be contributed by natural sources as well as urban and agricultural nonpoint sources, this is a multi-faceted problem.
- Pesticides and farm chemicals – DNR representative indicated that there are still low aldrin/dieldrin pesticide action levels. The criteria are believed to be incredibly low, suggesting that science might be ahead of what action allows us to do.
- Single sample max (SSM) - Primary concerns here involve (1) the use of a beach criterion to assess support of uses in rivers and streams; (2) the use of an indicator bacterium (*E. coli*) that an increasing amount of research suggests can survive and possibly replicate in sediment (thus interfering with the presumption that levels of *E. coli* indicate the degree of fecal contamination); and (3) the perception that the single-sample maximum criterion is equivalent to the geometric mean as a statistic to be used in identifying impairments. (See also bacteria.)
- Stream impairment delineations – Reclassification to more consistently align streams versus TMDLs with watersheds (i.e., WW-2 around A2 pools).
- Surface Water Classification document/database – Reorganize the SWC and create a database/GIS coverage
- Total recoverable values - Surface water standards are "total recoverable" values. As such, suspended solids in a surface water sample get analyzed along with the dissolved constituents. This can cause impairments based on what are naturally-occurring compounds, particularly with metals.
- Turbidity – Turbidity in samples can cause a problem if samples are not filtered. It can reflect a stream as impaired even if that is not a true representation of the mechanism occurring.
- Underground storage tanks – Rules for surface water are handled differently in the Underground Storage Tank Section and the Water Quality Standards Section. The rules should be brought closer in line to each other. Another concern includes state-owned lakes. Iowa Code 455B.186(1) states: "A pollutant whether treated or untreated shall not be discharged into any state-owned or artificial

lake.” Stakeholders have indicated they feel this is an unfair rule to hold marinas accountable to when boaters on waters are not held to the same standard.

A detailed summary of comments and an explanation of each issue presented at this meeting as well as the external stakeholder meetings and public meetings can be found on DNR's website at:

<http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterQualityStandards/TriennialReview.aspx>.

Another component of this meeting was to enlist ideas from different parties on how to best get public notice out to different people and organizations that each area works with that might have an interest in these rules.

#### IV. EPA Consultation Meeting

The DNR Core Group held an EPA Triennial Review Scoping meeting in Lamoni on January 21, 2011. The department introduced the initial comments we had received from the DNR stakeholders and the group then discussed some of EPA's issues. Items listed on EPA's radar were:

- General use waters – Reportedly, in Missouri, 80% of NPDES facilities discharge into unclassified waters. There is a perception that there may be many waters in Iowa that are categorized as general use but which do not meet the true definition of general use and should be designated.
- Lake Designated uses – EPA would like to see the lakes recreational uses cleaned up in the Surface Water Classification. One approach may be to review three river basins at a time. ISU is currently working on a lakes project that could be useful and may be tied into tiered aquatic life uses.
- 304(a) criteria updates – Take a look at cold water headwater streams, B(CW-2). There are no criteria listed for them. At the same time, DNR could look at metals criteria.
- Designating human health criteria – Human health criteria was not factored into the rebuttable presumption.
- Updating disapproved rules – Review Iowa's current water quality standards for any EPA disapprovals.



## V. External Stakeholder Meetings

The department met with external stakeholders to discuss concerns and potential Water Quality Standard changes. Stakeholders that DNR worked with routinely on Water Quality Standards as well as others believed to have an interest in these rules were contacted and invited to participate. To ensure that each group of stakeholders had ample opportunity to adequately voice their ideas, the department divided the external stakeholders into three groups: agricultural, environmental, and municipal/industrial. These meetings were held on January 24 and 25, 2011, at the DNR Central Office in Des Moines. The groups were introduced to the Triennial Review process, and participants were asked to list off things they would like to see changed in the Water Quality Standards.

A detailed summary of comments and an explanation of each issue presented at this meeting as well as the internal DNR stakeholder meetings and public meetings can be found on DNR's website at:

<http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterQualityStandards/TriennialReview.aspx>.

## VI. Public Meetings

The cornerstone of the Triennial Review process is the public. The Triennial Review process was developed to provide a path for the public to actively participate. DNR publicized meeting dates on the DNR *EcoNewswire* and on the Water Quality Standards ListServe. A description of the Triennial Review process was provided with each of these notices. In one case, this publication resulted in requests for radio and television interviews promoting the meeting.

Six public meetings were held across the state in February and March 2011 in each of DNR's six field office regions:

Atlantic - February 15 (Field Office Region 4)  
Spencer - February 16 (Field Office Region 3)  
Clear Lake - February 17 (Field Office Region 2)  
Independence - February 22 (Field Office Region 1)  
Washington - February 23 (Field Office Region 6)  
West Des Moines - March 9 (Field Office Region 5)

Where possible, meetings were held at a time when the public could be reasonably expected to be able to attend (from 4 to 7 p.m.). The only location unable to have the meeting held at this time was Independence where a fitness class was regularly held at this time. Meetings were held at public libraries or other common public meeting locations with easy access and parking.

Two DNR representatives from the Water Quality Standards Section were present at each meeting. One member (Rochelle Cardinale, Water Quality Standards Coordinator) gave a short presentation explaining the key areas of the Water Quality Standards. A second member (Matt Dvorak) wrote down comments/thoughts/ideas offered by the different participants.

Radio, television, and/or newspaper inquiries also occurred as a result of the Spencer, Clear Lake, and Washington meetings. KICD-Radio out of Spencer Iowa held interviews on January 28 and 31, 2011, inquiring what the Triennial Review meetings were about and discussing how the public could come out to offer their thoughts. KIMT-TV out of Clear Lake filmed a portion of the public meeting held there on February 17, 2011. The clip was shown on KIMT-TV also on February 17. Finally, the *Washington Journal* attended the Washington meeting on February 23, 2011, and interviewed Rochelle Cardinale on the telephone on February 24, 2011.

Many of these meetings were well attended. This appears to be in part due to a mass mailing from a local activist group promoting the meetings as an opportunity for people to vent their concerns and frustrations about animal feeding operations. Unfortunately, many of the comments, while good comments regarding water quality, were not related directly to Water Quality Standards. At each of these meetings, the attendees were informed that those comments were not directly related, but that the DNR staff would go ahead and record the comments so that different sections of the DNR would be aware of the concerns of the public. This occurrence indicates to us that additional education and clarification may be warranted in advance of these meetings. However, many attendees generally indicated that while they understood these meetings were not directly related, they felt it was an opportunity for them to come out and speak to the DNR directly.

## VII. Organization Process of Public and Stakeholder Comments

With approximately 235 separate ideas and comments, there was a significant amount of data management required. All comments were entered into a main Excel spreadsheet with as much information as possible about the date, responder, contact information, and the location the information was provided to the DNR. Comments were broken down into what the commenter's general concern or issue was. If the commenter had an idea on how to address that concern, that information was added to a second column. Where the DNR took a direct response to a comment, that action was noted in a column.

To assist with sorting, key words were assigned to the different comments. There are some areas that may overlap, with some topics being overarching across other subject areas. A drop down feature to sort by keyword was added to facilitate the ability to create different searches. Once all comments were logged in, a data page was then created for each keyword area, so these thoughts would be combined. There were a total of 77 key words/subject areas created based on these comments.

A detailed summary of comments and an explanation of each issue presented at the series of Triennial Review meetings can be found on DNR's website at:

<http://www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterQualityStandards/TriennialReview.aspx>.

## VIII. Formation and Objective of TAC

With this large amount of information and the large number of ideas for possible changes to the Water Quality Standards, the department needed a way to effectively prioritize different suggestions. To help in its prioritization process, the department wanted to seek the professional advice of people that work

with or are very familiar with the Water Quality Standards rules. The group was designed to be a non-consensus based group. The members could give their perspective from their differing backgrounds and experience, which would allow the department to have a more complete look at the issues. Members were chosen based on providing well-rounded coverage in all key areas of the Water Quality Standards. Members were also selected to provide the opportunity for other groups that we had not yet heard from a chance to provide feedback as well. Even if people were not directly invited to participate in this group meeting, they were invited to submit any comments/thoughts they might have.

Members on this group are shown in Table 1:

<b>Participant</b>	<b>Agency/Company</b>	<b>Area of Expertise</b>	<b>Able to participate?</b>
Rochelle Cardinale	Iowa DNR WQS, Facilitator	Regulatory	Yes
Lori McDaniel	Iowa DNR, Supervisor	Regulatory	Yes
Jay Brady	Iowa Water Environment Association (IAWEA)	Water quality and water pollution control	Yes
Mike Delaney	Raccoon River Watershed Association	Watershed water quality	Yes
Christina Gruenhagen	Iowa Farm Bureau Federation	Agricultural	Yes
Susan Heathcote	Iowa Environmental Council	Environmental	Yes
Steve Hershner	City of Cedar Rapids	Larger municipal WWTF	No
Brett Lorenzen	Trout Unlimited	Fish and fishing	Yes
Jeff May	City of Knoxville	Moderate-size municipal WWTF	Yes
Grant Menke	Iowa Renewable Fuels Association	Biofuels industry	Yes
Greg Sindt	IAWEA, backup	Water quality and water pollution control	Yes
William Skalizky	Alliant Energy	Utilities	No
John Veach	Iowa Rural Water Association	Rural water infrastructure	Yes
Roger Wolf	Iowa Soybean Association	Soybean farming industry	Yes

A meeting was scheduled with the participants for June 29, 2011, and each participant was provided with an electronic copy of the public comment responses with names and contact information removed. Some participants felt they needed the full listing of commenters so they could understand the perspective of the comment, so a revised version was later supplied to all of the participants.

## IX. TAC Prioritization Process

In order to create a more functional list for the technical advisory committee (TAC), the DNR Water Quality Standards Section worked through the list and reviewed the discussion presented in each comment. Based on this review, items were deselected that (1) were not directly related to the three key areas of Water Quality Standards (Designated Uses, Criteria, and Prevention of Water Quality Degradation), (2) did not have widespread support to make the item a top priority, or (3) are being

covered by other areas of the department. Some areas deselected and the rationales for deselecting are listed in Table 2:

<b>TABLE 2 – FIRST DESELECTION in the TAC PRIORITIZATION PROCESS</b>	
<b>Item deselected</b>	<b>Reasoning</b>
Agriculture, policies and handling	Comments included agricultural policies and procedures. These are best handled by other program areas within the department.
Air quality from AFOs affecting water quality	This comment is best handled by other program areas in the department more familiar with the science involved in this aspect.
Animal feeding operations (AFOs)	Comments included agricultural policies and procedures. These are best handled by other program areas within the department.
Cap-and-trade policies	This is a policy issue beyond the scope of Water Quality Standards.
Controlled discharge lagoons (CDLs)	These are limited in number, and fall under the scope of the NPDES and WES Sections.
Contaminated sites, specifically listed	Comments related to public complaints about specific sites were referred to the appropriate field office for follow up.
Conservation Reserve Program (CRP)	There are other program areas in the department that address CRP; this also falls under USDA program areas.
Combined sewer overflows (CSOs) and blending	These are limited in number, and fall under the scope of the NPDES and WES Sections.
Database	Improvements to the database for stream classifications and UAAs are already in the long-range plan internally as funding and staff time are available.
EPA backing, ensuring pursuit of	The WQS Section is created as an extension of the EPA, and we are already required to obtain EPA approval.
Ethanol production	These permitted facilities and are being handled under the NPDES Section.
Fertilizers	More effectively handled under other program areas in the department.
Flooding	Floodwaters are already known to be a composite of numerous chemicals and can be very hazardous. Flooding is covered under the Floodplain Section and Emergency Response Section, as well as addressed by Army Corps of Engineers and Army National Guard.
Geese	As urban sprawl occurs, it opens up more grassy areas that are a draw for geese. Since we have little control over geese population and migrations at this point, we are unable to prioritize this issue at this time.
Influence of special interests	This is a bigger issue than just the Water Quality Standards section and overall ways to address special interest interactions are best handled at the management level.
Iowa's reputation	This is a bigger issue than just the Water Quality Standards section and overall ways to improve Iowa's reputation are best handled at the management level.
Odor, as coming from AFOs	This comment is best handled by other program areas in the department more familiar with the science involved in this aspect.
Penalties, enforcement	Penalties and enforcement are handled by the Legal Enforcement Bureau.
Pre-construction testing	This is best handled by a program area dealing with construction requirements.
Staff levels	Staff levels are controlled by funding availability, of which there is not much. This is also best handled at the management level.
Tiling	Comments included agricultural policies and procedures. These are best handled by other program areas within the department.
Urban sprawl	This is a regional and national problem beyond the scope of the Water Quality Standards Section.

With the first deselection complete, the department then took the remaining items and assigned them to one of four categories: each of the three categories of Water Quality Standards (designated uses,

criteria, and antidegradation, the preservation of water quality) and a fourth category of overarching topics (topics that cover several of these areas).

This stage is shown in Table 3:

<b>TABLE 3 - CATEGORIES AT THE START OF THE TAC</b>	
Designated Uses	<ul style="list-style-type: none"> <li>- General Use definition</li> <li>- Human Health designation</li> <li>- UAAs for Impaired Waters with no NPDES discharge</li> <li>- Clean up Lake Designated Uses</li> <li>- Remove Rebuttable Presumption</li> <li>- Longer stream segments</li> <li>- B(WW-1) definition</li> <li>- B(WW-3) definition/implementation</li> <li>- Tiered aquatic life uses, need different levels of protection</li> <li>- Update protocols</li> <li>- Class C designations - public water supplies (PWSs with surface water-influenced sources)</li> <li>- Cold Water - identify B(CW-2) streams</li> </ul>
Criteria	<ul style="list-style-type: none"> <li>- General Use - Resident species versus representative species</li> <li>- Human Health Criteria versus Maximum Contaminant Level (MCL)</li> <li>- Chronic Criteria implementation of impairment</li> <li>- Iron Criteria</li> <li>- Metals Criteria Detection Levels</li> <li>- Arsenic Criteria</li> <li>- Remove Aluminum Criteria</li> <li>- Evaluate criteria based on transportability and cumulative effects</li> <li>- No criteria for pollutants that are predominantly nonpoint source in origin</li> <li>- Nutrient Criteria for lakes and streams</li> <li>- Pesticide/Fertilizer Criteria</li> <li>- Pharmaceuticals Criteria</li> <li>- <i>E. coli</i> Single Sample Max (SSM)</li> <li>- Temperature Criteria</li> <li>- Resolve Total Dissolved Solids (TDS) approval with EPA</li> <li>- Turbidity Criteria</li> <li>- Ammonia</li> <li>- Biological Criteria for wetlands</li> <li>- Beaches - <i>E. coli</i></li> <li>- Narrative Criteria - assessment procedures via narrative criteria is problematic</li> <li>- Chromium-VI</li> <li>- Cold Water streams - need to add criteria</li> <li>- Copper</li> <li>- Cyanobacteria</li> <li>- Dissolved Oxygen (DO) Criteria</li> <li>- Pyraclostrobin &amp; crop fungicides</li> </ul>
Antidegradation	<ul style="list-style-type: none"> <li>- Allow <i>de minimus</i></li> <li>- Pollutants of concern definition</li> <li>- Tier 2.5</li> <li>- Substantial economic impact (SEI) and Alternatives Analysis - too many unknowns regarding outcomes, process changes, swapping chemicals, etc.</li> <li>- Nominate streams for Tier 3</li> <li>- Instead of requiring expensive systems, allow cities to spend equal amounts of money to improve overall water quality (i.e., buffer strips)</li> <li>- 2% of income rate is too high - other states have lower</li> </ul>
Overarching or other	<ul style="list-style-type: none"> <li>- Master Matrix as Standard</li> <li>- Mixing Zone for Mussel Beds</li> <li>- Design standards for nonpoint sources - Set different water quality goals based on source?</li> <li>- Rulemaking Process - quicker, no specific numeric values</li> <li>- More public participation in rule processes</li> <li>- Public notice of bacteria counts</li> <li>- Reorganization of Surface Water Classification (SWC) document</li> <li>- Work with UST Section</li> <li>- Nonpoint Source Management Program should be closely tied with standards</li> <li>- Water Quality Standards should include Best Management Practices (BMPs)</li> <li>- Compliance Schedules - allow more flexibility/time to meet changing standards</li> <li>- Cost</li> <li>- Chronic Criteria and ambient monitoring</li> </ul>

At the beginning of the June 29, 2011, TAC meeting, participants were walked through the Triennial Review process and steps to date. They were then presented with the topics and categories as currently sorted. Members were asked if there were items that overlapped, items that could be handled together, and items that were not included. There was also discussion on if these items were being addressed or researched in other program areas or work products in the department.

As a result of this preliminary discussion, several items were added or discussed as shown in Table 4:

<b>TABLE 4 - ADDED ITEMS BY TAC MEMBERS</b>
- Recalculation methodology, resident versus representative - Added note this involved <i>C. Daphnia</i>
- Cyanobacteria - microcystin standard discussion
- Clean up Lake Designated Uses - Added wetlands to this
- Class C Designations, clarification that this involved adding these designations
- Impaired Waters Designations/Revised standards to have different levels of impairment - This was added as a topic
- Flow criteria - High, low, variable averaging conditions - Added as a topic
- Review 2007 304(a) chemical criteria for toxics - Added as a topic
- Metals: Total Recoverable, Total Dissolved, and Bioavailable - Added as a topic

With the combined and clarified topics as shown in Tables 3 and 4, the TAC members were then asked to complete an exercise. Each member was provided with three sticky dots, one each in green, yellow, and red. These dots represented their first choice for an action item (green), second choice (yellow), and third choice (red). Members were given time to mull over the topics, discuss, and place their stickers.

The resulting outcome of this exercise is shown in Table 5. As a note, if an item did not receive at least one vote, it was not listed in this table.

TABLE 5 - TAC COMMITTEE VOTING RESULTS			
Topic	# of dots		
	Green	Yellow	Red
Cold Water Criteria	1		1
Lakes & Wetlands Designated Uses		2	
Class C Designated Uses			1
Remove Rebuttable Presumption	1		1
Human Health Criteria	1		
Impaired Waters, different levels of impairment		3	
Biocriteria for Wetlands			1
Nutrient Criteria	1	1	
No criteria for pollutants of nonpoint source origin			1
Temperature		1	
2007 304(a)	1		
Metals Detection Levels	1	2	
Antidegradation, overall incl. subtopics	4		4
- Antideg - POCs	1		2
- Nominate Streams for Tier 3			1
- Instead of expensive systems, allow people to spend \$ toward water quality	2		

This exercise served to provide another level of deselection by showing which topics did not have widespread support to serve as high priority for discussion. The items shown in Table 5, items that did receive a vote, were discussed by the TAC. This discussion is outlined in Section X below.

## X. TAC Discussion

With the start of a more refined list of priority items, the department then asked TAC members their thoughts on these different topics. A list of questions introduced to members as a general guide for their discussion included:

- ❖ Why are these items a priority to your organization?
- ❖ What are the concerns? What might be some obstacles we would need to overcome?
- ❖ Which of these ideas seem feasible?
- ❖ Could they be implemented quickly? What might it take to implement?
- ❖ Why would these work? Why wouldn't these work?

The group then went through a discussion based on their individual and/or organization experience related to these topics. Meeting notes from this meeting are included in Appendix B, Meeting Notes for Triennial Review Technical Advisory Committee Meeting.

This process gave the department a well-rounded look at the different topics, provided a good understanding of what some of the issues were from different angles, and gave the department new information on work or other sources of information that might be available.

## XI. Internal DNR Group to Discuss

Armed with this mass of information and full discussion with the TAC, the department met internally to try to hone in on the items to prioritize taking a look at for the next three years. A meeting was held on July 21, 2011, and included the following attendees:

Rochelle Cardinale, Water Quality Standards Section  
Connie Dou, Water Quality Standards Section  
Xiaojian Gao, Water Quality Standards Section  
Lori McDaniel, Water Resources Supervisor  
John Olson, Water Monitoring and Assessment Section  
Tom Wilton, Water Monitoring and Assessment Section

The results of the TAC meeting discussions were presented to the group, and then participants were given a chance to discuss the topics.

Much of this discussion is presented in Table 6:



**TABLE 6 – DNR PRIORITIZATION DISCUSSION**

Topic discussed at TAC	Discussion
Antidegradation - general	This is still relatively new. We won't be as familiar with its impacts until we study it for awhile. Could look at this for a year and a half and then we'll see what issues present themselves.
Nominate Tier 3 streams	We do not presently have Tier 3 streams identified but we are open for nominations based on implementation procedures. There could be a Tier 3 nomination form.
Instead of requiring upgrading of the treatment system, consider other alternatives	This could be separated out as its own item.
Look at <i>de minimus</i> again	This is perhaps not top priority. There might be criteria this would be applicable to, but it would require a lot of recordkeeping required. You would need a cap somewhere and someone tracking it. There is a lot of work for not much return. For example, if there's a 5% increase only, and then they increase it by 5% again, it can add up to a big concern. More work for DNR on shrinking budget.
Antidegradation implementation	What about UAAs for streams without a permit? This has come up before in Water and Monitoring Assessment section. A priority area as impairments identified on unsewered communities. Aquatic not as much a concern as A1 designation.
Metals	EPA feels 304(a) levels are fine. This comes down to dissolved versus total recoverable. We use total recoverable, others wanted total dissolved. Is there a conversion for this? Is water quality dependent. A lot of other states use dissolved. This may be an area to look into.
Nutrients for lakes and streams	This is already being addressed by the Nutrient TAC committees.
Flow criteria	This is more a Waste Load Allocation Procedure (WLAP) item. Flow is a variable in that.
Temperature	Being addressed in WLAP, although it would be beneficial to check with NPDES Section. Do they feel WLAP addresses this issue.
2007 Chemical Criteria – 304(a)	Do we go back and tackle this? Will need to review if C. Daphnia is present. EPC had suggested not looking at whole list, but at key items.
Biological criteria for wetlands	This could be combined with the clean up lake and wetland designated uses topics.
Cold water criteria and designation of streams	We need to have criteria before we can designate it. Could be time intensive, but IDNR Fisheries has done some work on identifying potential CW-2 candidate streams. Field work may be necessary. Not sure if this includes many permitted facilities. Is important to preserve quality of contributions to CW-1 streams.
Clean up lake and wetland designated uses	This would have to happen before biocriteria for wetlands. Want a way to assess wetlands. There is concern because of Iowa Water Plan. Contract w/ISU for indicator staff. Talk to Mary Skopec. Develop assessment framework. Gets complicated with shallow lake and wetlands.
Class C Designations	This is something Tim Hall's bureau (Geological & Water Survey) could possibly help with. Wellhead protection program might also be able to work with this.
Remove rebuttable presumption	Would require a great deal of editing. In the long term, it might make sense. We track small streams in a different category. If presumption applies and is A1, B(WW-1), is automatically impaired. TMDLs don't have to go through rulemaking. Could follow up and do a UAA.
Human health designations	This appears really dealing with beach criteria and is outside Water Quality Standards. Is primarily about bacteria.
Revise standards to have different levels of impairment	Priorities are addressed in impaired waters list internally, but could work on improving communication.

## XII. Proposed Work Plan

Based on the group feedback in the prioritization process, the following items listed in Table 7 were selected as action items for the Triennial Review Work Plan for the 2012 to 2014 period.

<b>TABLE 7 – TRIENNIAL REVIEW ACTION ITEMS</b>
1. Metals criteria
2. Lake and wetland designated uses
3. Cold water streams
4. Antidegradation

### **1. Selected Subject Areas**

#### **A. Metals Criteria**

The metals criteria action item involves further investigation/modification of metals criteria (and relates primarily to the issue of dissolved versus total recoverable, but could include potentially looking more closely at specific contaminants such as at arsenic and copper).

##### **DISSOLVED VS. TOTAL RECOVERABLE**

The primary issue here could involve both the metal criteria expression (total vs. dissolved) and the implementation of the metal criteria in different Clean Water Act (CWA) programs. Both the water quality standards criteria in Iowa and measurements reported by DNR water quality monitoring networks are expressed as total recoverable metals. However, USGS data, used by some program areas within the department (such as the Watershed Monitoring and Watershed Improvement Sections), report metals as dissolved, and in doing so, it seems the frequency or magnitude of violations when this dissolved data is used are not as high. The total recoverable methods use unfiltered sampling, whereas the dissolved method measures the dissolved metal concentration in the water column. It is generally believed by EPA and a majority of the scientific community that the use of dissolved metals to set and measure compliance with water quality standards is the preferred approach because dissolved metals more closely approximate the bioavailable fraction of metal in the water column. It might seem easy enough up front to just change the standards to dissolved metals, but there are implications that could come from this. Different program areas have to use the total recoverable values. For example, EPA's NPDES regulations require that metals limits in permits be stated as total recoverable in most cases (40 CFR122.45(c)). When water quality criteria for metals are expressed as the dissolved form, there is a need to translate TMDLs and NPDES permits from the dissolved form of a metal to the total recoverable form. The implications of switching to dissolved values from total recoverable needs to be explored.

##### **ARSENIC**

Iowa's current human health criterion of 0.18 µg/L (for both fish and water consumption) was developed based on the EPA 304(a) criterion for human health protection. This ambient criterion applies to water bodies designated as Class C drinking water uses. EPA also established a drinking water

standard of 10 µg/L as the maximum contaminant level (MCL) value under the Safe Drinking Water Act (SDWA), which applies at the tap. Issues related to Iowa's human health criterion are presented below:

1. The human health criterion of 0.18 µg/L was derived based on EPA's late 1960s and 1970s skin cancer studies and old 1980 human health criteria methodology. Since then, new toxicity data have become available. EPA is in the process of revising the recommended human health ambient criteria for arsenic using new toxicity data. Also, EPA has published new 2000 human health criteria methodology. The new scientific information should be considered to update the arsenic human health criteria.
2. The inconsistencies, or gaps, between the drinking water MCL under SDWA and the human health criteria under the 304(a) criteria are a concern. Specifically, the 304(a) human health criterion of 0.18 µg/L (applied to drinking water uses) is significantly different than the MCL of 10 µg/L (applied at the tap) established under SDWA.
3. The human health criteria values are below the detection limits using EPA-approved testing methods and could cause implementation issues.
4. Several States and EPA Region 6 have adopted site-specific, human health criteria that are different than the EPA human health criteria and have been approved by EPA.

## COPPER

Iowa adopted the EPA national copper criteria in 2007, which are more stringent than the previous Iowa criteria. The EPA criteria were based on the 1995 Updates: *Water Criteria Documents for the Protection of Aquatic Life in Ambient Water (EPA-820-B-96-001 September 1996)* and are a function of water hardness. Several issues have been raised by different stakeholders since the implementation of the 2007 criteria:

1. After Iowa adopted the copper criteria, EPA published new copper criteria. The EPA new copper criteria use a completely different approach – The Biotic Ligand Model (BLM). The Biotic Ligand Model (BLM) – a metal bioavailability model that uses receiving water body characteristics to develop site-specific water quality criteria. The BLM requires ten input parameters to calculate a freshwater copper criterion: temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. Iowa has the option to adopt the new EPA copper criteria which has the advantage of using site-specific water chemistry data.
2. Some recommend using resident species that only occur in Iowa waters to recalculate the copper criteria for Iowa waters
3. Dissolved copper is the bioavailable form of copper. Many believe Iowa should adopt a dissolved copper standard to replace the total copper standard, part of the issue discussed earlier in this section.
4. Some suggest Iowa should adopt the water effect ratio method to develop site-specific copper criteria.
5. Municipal effluent dischargers could have difficulty meeting the copper limits due to drinking water pipe corrosion sources.
6. The current Iowa copper criteria for aquatic life protection are below the detection limits based on EPA approved testing methods. This is an implementation issue that could cause the appearance of impairments that may not actually be occurring.
7. Copper removal technologies can be costly.

## PLAN

A technical advisory committee will likely be needed to fully address these concerns surrounding metals criteria. These issues cover a lot of different program areas and a great many "old school" and intrinsic practices held by different monitoring programs, DNR and its labs, outside laboratories, private facilities actively involved in this monitoring, and EPA. This group should include members from each of these different areas to look into how they are part of this issue, what their respective program areas can do to address this issue from their perspective, and to ultimately come up with a combined solution. These members should bring with them an understanding of why their program areas use what they use, how they are used, and what impacts different changes might cause on their organization.

### **B. Lake and Wetland Designated Uses**

Lake and wetland designated uses is an item that evolved throughout the Triennial Review process. It was initiated as addressing lake designated uses. As it moved through the TAC discussion process, it was determined that it made logical sense to take a look at wetlands while looking at the lake designated uses.

Separating lakes and wetlands in the B(LW) designation has been a long-standing problem in the surface water classification. There are some obvious issues regarding the applicability of our B(LW) criteria for dissolved oxygen (DO) to wetlands (which, if they are functioning properly as "wetlands," are low-DO environments). There is also the issue of wetlands functioning as sinks and treatment areas for nutrients (especially nitrates) and the water quality goals of keeping nutrient levels in Iowa lakes as low as possible. Therefore, if/when a numeric criterion for nutrients is established, and if this criterion is applied to all B(LW) waters, nutrient impairments would be identified on waterbodies (wetlands) that are widely viewed as natural treatment areas for excess nutrients.

These issues alone would be sufficient to suggest the need to split lakes from wetlands, but there are other issues (e.g., inherent differences in expected aquatic communities in lakes vs. wetlands). One difficulty in splitting lakes from wetlands in Iowa's surface water classification is that, although a list of Iowa wetlands was developed in the mid-1990s, there is no known list of wetlands that has received buy-in from the various bureaus of department that have management responsibilities regarding wetlands. In the mid-1990s, the IDNR Wildlife Bureau—at the request of the Water Quality Monitoring and Assessment Section—separated wetlands from lakes in the list of Class B(LW) waters in the surface water classification of that time. The goal of this exercise was for Iowa to be able to comply with the EPA requirement for states to report on wetland water quality as part of Clean Water Act Section 305(b) reporting. The 1994 list of Iowa wetlands was incorporated into DNR's Water Quality Assessment (305(b)) database (ADBNet: <http://programs.iowadnr.gov/adbnnet/index.aspx>). This list has been used for Section 305(b) reporting and Section 303(d) (impaired waters) listing since that time.

As a first cut for addressing this, the lake/wetland separations in ADBNet could be used. This approach, however, is accompanied by the complication that within the waterbodies identified as wetlands in ADBNet, there are wetlands that some (e.g., DNR Fisheries Bureau) consider "shallow lakes", or "tweener" lakes. These are water bodies that hydrologically exhibit characteristics of both wetland and lakes. Some of these shallow lakes have been the focus of much recent management activity to drain the shallow lake and re-establish aquatic macrophytes, thus resulting in a more stable fishery. The shallow lake issue is something that would need to be addressed in any attempt to split wetlands out of the B(LW) use designation.

Another item of note is that there has been and continues to be some moderately-intensive water quality monitoring on several Iowa wetlands. Based on this monitoring, there has been some attempt (or at least intent) to create an index of biotic integrity (IBI) for Iowa wetlands.

Work to accomplish the goal of separating lakes and wetlands would first have to include compiling known information on these issues within the state. What lists of data do we have available? What work has been done? The ADBNet list of wetlands could be used as a first cut, but this list would require further refining. With an understanding of the universe of sites to look at, we would need to compile a technical advisory committee (TAC) to work through the issues of appropriate nutrient criteria for wetlands and classifying "tweener" lakes.

### **C. Cold Water Streams**

Of the four action items selected, this one is believed to be one of the easier to accomplish. The Class B(CW2) designated use is defined as:

"Waters that include small, channeled streams, headwaters, and spring runs that possess natural cold water attributes of temperature and flow. These waters usually do not support consistent populations of trout (*Salmonidae* family), but may support associated vertebrate and invertebrate organisms."

This designation was previously created through rulemaking, but was not populated with stream segments. Coordination with the department's fisheries staff will take place to review potential cold water stream segments.

The department will revisit this topic and review what steps have already been taken towards nominating Class B(CW2) streams. Depending on feedback from stakeholders, the department may develop a nomination process for B(CW2) streams.

### **D. Antidegradation**

DNR's revised Antidegradation policy was first implemented in 2010. In year two of the three-year period, the department will evaluate how the Antidegradation Implementation Policy is working, what changes may be needed, and what is working well.

In performing the Antidegradation evaluation, the department will meet with the different sections that work with the Antidegradation procedure to learn about their experiences with it. The department will also talk with wastewater treatment facilities, industries and municipalities, and other interested stakeholders to gain feedback on how the process is working. The department will evaluate processes and procedures, impacts, and opportunities to improve the process.

## **2. Existing/ongoing projects**

In addition to the new projects, it is important to include the department's ongoing water quality standard projects.

## **A. Nutrients**

This is an item that received significant feedback during the Triennial Review. Numerous stakeholders requested information on what was happening with nutrients and the work towards numeric nutrient criteria.

EPA released a memo on March 16, 2011, advocating a partnership with states to address phosphorus and nitrogen pollution through the use of eight framework elements. The URL for this memo is located at the following link:

[http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/memo\\_nitrogen\\_framework.pdf](http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/upload/memo_nitrogen_framework.pdf).

The department is committed to working with other state agencies and stakeholders to develop a comprehensive nutrient strategy.

## **B. Use Assessment/Use Attainability Analysis (UAA)**

With the 2006 revision to the Water Quality Standards, all stream designations fell under the rebuttable presumption of Class A1 (primary contact recreation use), and B(WW-1) (aquatic life use) unless an assessment (UAA) showed that these beneficial uses were not appropriate for the stream (e.g., stream was too small to support primary contact recreation (swimming-type uses)). Of approximately 958 wastewater treatment facility (WWTF) sites (facilities or outfall locations) whose receiving streams have been assessed, there are approximately 115 receiving streams [or wastewater facilities?] that need evaluation through a UAA. To get to this point: approximately 1,180 stream segments have been designated through Batch 3 of these rulemakings; data has been collected for approximately 3,000 recreational use sites; 1,178 aquatic habitat sites; 1,197 fish sites; and 449 photo sites. These numbers are dynamic and continue to grow as facilities seeking new or revised National Pollutant Discharge Elimination System (NPDES) permits for their facilities are added.

Use Assessment/Use Attainability Analyses (UAAs) involve conducting assessments between March 15 and November 15 for recreational use, and from July 1 through October 30 for aquatic use. Another factor in assessments is that the stream assessments can only be conducted when the streams are at base flow conditions and are not experiencing either elevated levels/flooding or drought. In some years in Iowa, particularly in spring and in August, it can be difficult at times to meet these conditions. Another consideration is that staff that perform these assessments are at present (September 2011) limited to three. Once field work is completed, staff then prepares the UAA for each individual stream. Facilities are then notified of the determinations. The results of the stream designations are grouped in batches; each batch is typically a compilation of the field work performed in that recent field season. The designations recommended by the UAAs, where applicable, are then required to go through the rulemaking process and ultimately require EPA approval.

## **C. Waste Load Allocation Procedure (WLAP) (formerly known as Basin Support Document)**

The Waste Load Allocation Procedure (WLAP) document provides the technical methodologies to develop wasteload allocations and water quality-based limits to be protective of surface water quality standards as described in IAC 567 Chapter 61 – Water Quality Standards. A Wasteload Allocation (WLA) is the portion of a receiving water's total maximum daily load (TMDL) that is allocated to one of its

existing or future point sources of pollution. Revisions to this document were initiated in 2010 and continue. A first draft issue paper was sent to internal staff in May 2010. EPA reviewed this document and sent comments back in June 2010. DNR discussed this information via internal meetings, and performed a scoping meeting with EPA in September 2010. After additional revisions to the issue paper, decision points were identified in November 2010. Also at this time, a rule reference document draft was generated and sent to internal DNR staff. In conjunction with the Triennial Review Process described in this document, stakeholder meetings for the WLAP were held together to reduce the number of meetings required by stakeholders and DNR staff. These stakeholder meetings were held in January 2011. Based on comments received from stakeholders, additional decision points were identified. Work remaining for this project includes formation of a WLAP technical advisory committee (TAC), development of a final draft WLAP, stakeholder meetings to discuss final version, development of a consultation package for EPA, and the start of rulemaking. Rulemaking will also include many steps through the fall of 2011 and early 2012 including preparation of a Fiscal Impact Statement including a Jobs Analysis, a Notice of Intended Action, meetings with the Governor's Office, appearances at the Environmental Protection Commission (EPC), six public hearings around the state, preparation of a responsiveness summary, as well as presentation to the Iowa Legislature's Administrative Rules Review Committee.

### **3. Schedule**

The following schedule shown in Table 8 lays out an estimate schedule of activities based on steps needed for each of the four new action items keeping in mind existing projects and workloads. These schedules are estimates and may change depending on different project or DNR requirements. These serve as a general goal for the next three years:



TABLE 8 – Estimated Work Schedule				
	First Quarter (Jan-Mar)	Second Quarter (Apr-Jun)	Third Quarter (Jul-Sep)	Fourth Quarter (Oct-Dec)
2012	<ul style="list-style-type: none"> <li>* Metals - information gathering</li> <li>* Cold Water - information gathering</li> <li>*Nutrients - Stream TAC cont.</li> <li>*Nutrients - Nutrient Strategy meetings</li> <li>* UAA - Initiate Batch 4 rulemaking</li> <li>* UAA - Batch 3 Pending EPA Review</li> <li>*WLAP - rulemaking</li> </ul>	<ul style="list-style-type: none"> <li>* Metals - information gathering</li> <li>* Cold Water – form Technical Advisory Committee (TAC)</li> <li>*Nutrients - Stream TAC cont.</li> <li>*Nutrients - Nutrient Strategy meetings</li> <li>*UAA – Batch 5 Field Work</li> <li>* UAA - Batch 4 rulemaking</li> <li>* UAA - Batch 3 Pending EPA Review</li> <li>*WLAP - rulemaking</li> </ul>	<ul style="list-style-type: none"> <li>* Metals – form TAC</li> <li>* Metals – Technical Advisory Committee meetings</li> <li>*L&amp;W – information gathering</li> <li>*Cold Water – TAC</li> <li>*Nutrients - Stream TAC cont.</li> <li>*Nutrients - Nutrient Strategy meetings</li> <li>*UAA – Batch 5 Field Work</li> <li>* UAA –Batch 5 prep UAAs</li> <li>* UAA - Batch 4 rulemaking</li> <li>* UAA - Batch 3 Pending EPA Review</li> </ul>	<ul style="list-style-type: none"> <li>* Metals – TAC meetings</li> <li>*L&amp;W – information gathering</li> <li>* Cold Water – Stakeholder meetings</li> <li>*Nutrients - Stream TAC cont.</li> <li>*Nutrients - Nutrient Strategy meetings</li> <li>*UAA – Batch 5 Field Work</li> <li>* UAA – Batch 5 prep UAAs</li> <li>* UAA – Batch 5 Initiate rulemaking</li> <li>*UAA – Batch 4 Pending EPA review</li> </ul>
2013	<ul style="list-style-type: none"> <li>*Metals – EPA Consultation</li> <li>*L&amp;W – EPA Consultation</li> <li>*Cold Water – EPA Consultation</li> <li>*Cold Water – Prepare rule changes</li> <li>*Nutrients – EPA Consultation</li> <li>*Nutrients – Nutrient Strategy meetings</li> <li>*UAA – Batch 5 rulemaking</li> <li>*UAA – Batch 4 Pending EPA review</li> </ul>	<ul style="list-style-type: none"> <li>*Metals – Stakeholder meetings</li> <li>*L&amp;W – Form TAC</li> <li>*Cold Water – Rulemaking</li> <li>*Antidegradation – Information gathering</li> <li>*Antidegradation – Form TAC</li> <li>*Antidegradation – TAC meetings</li> <li>*Nutrients – Nutrient Strategy meetings</li> <li>*Nutrients – TAC meetings</li> <li>*UAA – Batch 6 field work</li> <li>*UAA – Batch 5 rulemaking</li> <li>*UAA – Batch 4 Pending EPA review</li> </ul>	<ul style="list-style-type: none"> <li>*Metals – Stakeholder meetings</li> <li>*L&amp;W – TAC/Stakeholder meetings</li> <li>*Cold Water – Rulemaking</li> <li>*Antidegradation – information gathering</li> <li>*Antidegradation – TAC meetings</li> <li>*Nutrients – Nutrients Strategy meetings</li> <li>*Nutrients – Stakeholder meetings</li> <li>*UAA – Batch 6 field work</li> <li>*UAA – Batch 6 prep UAAs</li> <li>*UAA – Batch 5 Pending EPA review</li> </ul>	<ul style="list-style-type: none"> <li>*Metals – Prepare rule changes</li> <li>*L&amp;W – TAC/Stakeholder meetings</li> <li>*Cold Water – Pending EPA review</li> <li>*Antidegradation – EPA Consultation</li> <li>*Antidegradation – Stakeholder meetings</li> <li>*Nutrients – Nutrients Strategy meetings</li> <li>*Nutrients – Stakeholder meetings</li> <li>*UAA – Batch 6 field work</li> <li>*UAA – Batch 6 prep UAAs</li> <li>*UAA – Batch 6 initiate rulemaking</li> <li>*UAA – Batch 5 Pending EPA review</li> <li>*Triennial Review – Internal stakeholder meetings</li> <li>*Triennial Review – EPA Consultation</li> </ul>
2014	<ul style="list-style-type: none"> <li>*Metals – Prepare rule changes</li> <li>*Metals – rulemaking</li> <li>*L&amp;W – TAC/Stakeholder meetings</li> <li>*Cold Water – Pending EPA review</li> <li>*Antidegradation – Stakeholder meetings</li> <li>*Nutrients – Nutrient Strategy meetings</li> <li>*Nutrients – Stakeholder meetings</li> <li>*UAA – Batch 6 rulemaking</li> <li>*UAA – Batch 5 Pending EPA review</li> <li>*Triennial Review – External stakeholder meetings</li> <li>*Triennial Review – Public meetings</li> </ul>	<ul style="list-style-type: none"> <li>*Metals – rulemaking</li> <li>*L&amp;W – TAC/Stakeholder meetings</li> <li>*Cold Water – Pending EPA review</li> <li>*Antidegradation – Prepare rule changes</li> <li>*Nutrients – Nutrients Strategy meetings</li> <li>*Nutrients – Prepare rule changes</li> <li>*UAA – Batch 7 field work</li> <li>*UAA – Batch 6 rulemaking</li> <li>*UAA – Batch 5 Pending EPA review</li> <li>*Triennial Review – Organize data/TAC</li> </ul>	<ul style="list-style-type: none"> <li>*Metals – Pending EPA review</li> <li>*L&amp;W – Prepare rule changes</li> <li>*Cold Water – Pending EPA review</li> <li>*Antidegradation – Rulemaking</li> <li>*Nutrients – Nutrients Strategy meetings</li> <li>*Nutrients – Prepare rule changes</li> <li>*UAA – Batch 7 field work</li> <li>*UAA – Batch 7 prep UAAs</li> <li>*UAA – Batch 6 Pending EPA review</li> <li>*Triennial Review – Prepare Work Plan</li> </ul>	<ul style="list-style-type: none"> <li>*Metals – Pending EPA review</li> <li>*L&amp;W – Rulemaking</li> <li>*Antidegradation – Rulemaking</li> <li>*Nutrients – Nutrients Strategy meetings</li> <li>*Nutrients – Prepare rule changes</li> <li>*Nutrients – Initiate rulemaking</li> <li>*UAA – Batch 7 field work</li> <li>*UAA – Batch 7 prep UAAs</li> <li>*UAA – Batch 7 initiate rulemaking</li> <li>*UAA – Batch 6 Pending EPA review</li> <li>*Triennial Review – Stakeholder review</li> <li>*Triennial Review – EPA review</li> </ul>



### **XIII. Summary and Conclusions**

The Triennial Review process was a useful tool that helped the department determine action items it would look at over the next three years. This process will begin again in 2013. There were items that did not make the cut at this time, but which are nonetheless important. These items will still be monitored where possible and if time and resources allow, they will be given a closer look. The outcome of this process yields a map or path of activity based on known resources available at the time. There are still many more steps that will be required to study and implement any of these issues.

DRAFT

## **Appendix A**

# Clean Water Act Triennial Review Provision

Sec. 131.20 State review and revision of water quality standards. (a) State review. The State shall from time to time, but at least once every three years, hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards. Any water body segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act shall be re-examined every three years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly. Procedures States establish for identifying and reviewing water bodies for review should be incorporated into their Continuing Planning Process. (b) Public participation. The State shall hold a public hearing for the purpose of reviewing water quality standards, in accordance with provisions of State law, EPA's water quality management regulation (40 CFR 130.3(b)(6)) and public participation regulation (40 CFR part 25). The proposed water quality standards revision and supporting analyses shall be made available to the public prior to the hearing. (c) Submittal to EPA. The State shall submit the results of the review, any supporting analysis for the use attainability analysis, the methodologies used for site-specific criteria development, any general policies applicable to water quality standards and any revisions of the standards to the Regional Administrator for review and approval, within 30 days of the final State action to adopt and certify the revised standard, or if no revisions are made as a result of the review, within 30 days of the completion of the review.

**Appendix B**

**MEETING NOTES for TRIENNIAL REVIEW  
TECHNICAL ADVISORY COMMITTEE MEETING**

June 29, 2011, 1:00 – 4:30 PM

## TRIENNIAL REVIEW TAC MEETING NOTES - 6/29/2011 - COMBINED

### ANTIDEGRADATION

#### POLLUTANTS OF CONCERN - DEFINITION

- Pollutants of concern (POC) – concern is that it seems definition doesn't match how it is being implemented, pollutants that are not of concern (distinction)
  - How is it being implemented?
  - Wording makes implementation inconsistent

#### NOMINATE TIER 3 STREAMS - ENCOURAGE NOMINATIONS

- Encourage nominations for populating Tier 3. Some felt that Tier 2.5 happened because there were no Tier 3 streams designated.
- Open up this process for the public. Triennial Review is a good time to do this.

#### INSTEAD OF REQUIRING UPGRADING OF THE TREATMENT SYSTEM, CONSIDER OTHER ALTERNATIVES

- If you could use money to improve stream more but in a different way, that should be an option
- And if a more cost-effective option will work, that should also be an option
- If use is biologically driven – make sure that is taken into consideration and treated differently
- Ammonia and *E. coli* are driving costs without adding in nutrients
- Big impact
- Nutrients are a big issue coming up
- Has to be proven as an alternative, not just an unknown trial. Show results before you can avoid standard requirement.
- Develop mechanism to allow trading
- Develop options for buffer strips, etc.

#### LOOK AT *DE MINIMUS* AGAIN

- Look at *de minimus* again - some areas where it makes sense
- *De minimus* indicates that if you are below a certain amount, you can increase this much without an alternatives analysis.

#### ANTIDEGRADATION IMPLEMENTATION

- Keep looking at implementation and how it is working for a longer time - maybe in three years. Let's study it and see what problems come up. It has only been in place for a year.

### METALS

- Chromium-VI and arsenic becoming more of an issue, on a nationwide level. No active chromium-VI standards. Some felt this area needs more research; others feel that may not be necessary. With

some metals, it's more a matter of how low do you go on detection levels. DNR started looking at arsenic, but withdrew it because other regions were working on it.

- In-ground inputs to chemicals
- Get in front of the issue
- Science moving toward bioavailability. Use parameters in water to determine how much bioavailability.
- Does EPA have info on chromium-VI?
- Have an iron issue - need to decide to make it a criterion or not. There is a white paper on this topic.
- Aluminum - If we address bioavailability, this will cover aluminum.
- Are the labs using the right technique → Method Detection Limits (MDLs)? Questions as to if detection is below an MDL, how is that/will that be handled?
- Some exceedances are occurring because of naturally-occurring background levels. How that plays into the standard - depends on size, site-specific location. Some feel our water quality standards allow this on a site-specific basis now.

#### NUTRIENTS FOR LAKES AND STREAMS

- We need to get this done → critical, not just for Iowa but for downstream (Gulf Hypoxia Zone)
- Coming anyway - better to deal with on state level
- Is the science there to set a numeric criteria - might be other ways
- Concern that the (stream nutrient TAC) isn't going to find cause + effect relationship
- More practical approach needed similar to Kansas, concern that it could end up more like Florida
- Do something now to reduce nutrients rather than wait for numeric standards → while TAC continues
- Science is all over the board
- Rely on best management practices (BMP), technology-based requirements
- Total maximum daily load (TMDL)-based situation
- Important to identify key contributors
- Purpose of numeric standard is to prevent impairments
  - Need way to evaluate nutrients trends, trend toward impairment
- Two nutrient issues: one on macro scale of loads to the Gulf, other is protection of water quality in local streams. Some feel it has to be stream specific.
- Sacrifice local stream quality for gulf improvement - [DISAGREEMENT]
- Stepped, target goals
  - get data to address standards
  - fill holes in the numbers
- Use impaired waters to set priorities
  - ↳ System of setting targets
- Trading program - bang for buck

#### FLOW CRITERIA

- Tighter pollutant limits need ability to use various flow regimes to minimize economic impact while having good water quality

- Important to point sources + how we develop standards for those discharges
- Is this a standard or an implementation issue – Waste Load Allocation Procedure (WLAP)
- Flow variable for specific pollutants → More than one way to address this
- Could look at influent limits for specific pollutants
- Flow needs to be taken into account with ammonia + protection of aquatic life
- EPA has info coming out - Ammonia
- Keep in mind we are losing diversity of mussels, we are losing mussels in Iowa. There are studies to see if they are being impacted by a wastewater treatment facility (WWTF). One downstream of Cedar Rapids.

### TEMPERATURE

- Being addressed in Waste Load Allocation Procedure (WLAP) may mean it doesn't need to be addressed as a standard
- Seems like this is being addressed in the WLAP with the 3°C rise.
- Wanted to be sure this was handled.

### 2007 CHEMICAL CRITERIA - 304(a)

- Policy review - Same criteria for B(WW-1, -2, and -3) Why have B(WW-1, -2, and -3)?
- Would seem different levels of aquatic life protection with different uses.
- Feel like it didn't get the review that it needed
- Set an important precedent
- We have option to adopt EPA recommendations.
- Recalculation methods - deleting species - time-intensive process to delete the species
- Are there particular criteria that are causing problems + address those - shorter list
- 304(a) meant as guidance - need to justify why less stringent

### BIOLOGICAL CRITERIA FOR WETLANDS

- Some wetlands are high quality but are threatened by high nutrients + other nutrients
- Lack of criteria for assessing wetlands
- Iowa Plan could impact existing wetlands + new wetlands created need to be functional
- Might combine w/clean up of lakes designations. Wetlands are different than lakes, with different systems.
- Dissolved oxygen (DO) is one example
- Need to do a wetland designation + then populate criteria
- Find reference conditions + biologic indicators, assessment protocol
- No definition of functioning wetland
  - Help to get funding
- Keep in mind migratory water fowl, they use these wetlands
  - Look at indicators
- Lots of different types of wetlands, would they be handled site-specific

- List of plants, macroinvertebrates, that we could use to rank wetlands
- See how it is working for treatment

#### COLD WATER CRITERIA + DESIGNATING

- Just start doing it
- We have Cold Water Protocol that we haven't implemented, because we don't have criteria.
- Need criteria before we can populate the designated use
- Run into 304(a) criteria issues
- When less stringent, need to justify
- Review fisheries work. They had some candidates for B(CW-2).

#### CLEAN UP LAKE + WETLAND DESIGNATED USES

- Too broad - Flood control reservoirs, wetlands, lakes
- How assessed for health is different. Requires biodata to be developed.
- Critical when we look at lakes vs. wetlands
- Split off wetlands → would need criteria → how close are we?
- Most river lakes designated as streams.
- Dammed up lakes - would not be able to act as a natural lake
- Depth, natural vs. manmade
- Not many designated wetlands. Most are general use.

#### CLASS C DESIGNATIONS

- Area of interest to be explored
- Narrow application, limited to water intake structures
- Might need to be added to standards
- Keep scope focused

#### REMOVE REBUTTABLE PRESUMPTION

- Once UAAs completed for listed National Pollutant Discharge Elimination System (NPDES) facilities, the need for the rebuttable presumption is reduced
- Creates a lot of uncertainty. Some feel most of these are not arguable.
- No funding for those that do not receive a discharge
- As assessed, then designate the use as opposed to the rebuttable presumption and then removing
- Not mandated in the Clean Water Act (CWA) to have rebuttable presumption [DISAGREEMENT on impact of this change]
- If went back to general use, then less protection → that would create problem



## HUMAN HEALTH DESIGNATIONS

- Want to be able to recreate without being concerned about getting sick
- Want to know if there is a specific problem at a particular time
- Smelly days vs. clean streams - needs monitoring + warnings
- We have good warning system for beaches, but not for everything.
- Where do you measure and how do you notify?

## REVISE STANDARDS TO HAVE DIFFERENT LEVELS OF IMPAIRMENT

- Indication of severity of impairment
  1. Don't cause hysteria
  2. What is the level of concern?
- Give high priority to impairments to some water bodies but not others.
- Priorities are addressed in impaired waters list internally → for purposes of targeting
- Need to improve communication
- Look into what we are already doing + communicate that more
- Priorities differ. Example, clean up Lake Rathbun for boating versus clean up of Pine Lake for sensitive brook trout.